

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

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Intellectual Property Management  
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## NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

29-12-2004

Applicant's or agent's file reference

20031003

### IMPORTANT NOTIFICATION

International application No.

PCT/FI2004/000055

International filing date (day/month/year)

04-02-2004

Priority date (day/month/year)

05-02-2003

Applicant

Outokumpu Oyj  
et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see Also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/

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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 20031003	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/FI2004/000055	International filing date ( <i>day/month/year</i> ) 04-02-2004	Priority date ( <i>day/month/year</i> ) 05-02-2003
International Patent Classification (IPC) or national classification and IPC G01N1/38		
Applicant OUTOKUMPU OYJ et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (*sent to the applicant and to the International Bureau*) a total of \_\_\_\_\_ sheets, as follows:
 

☐ sheets of the description; claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

Date of submission of the demand  24-11-2004	Date of completion of this report  14-12-2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer  Åsa Malm /itw Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (January 2004)

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2004/000055

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☐ the description:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-8</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-8</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-8</u>	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

The following documents were cited in the International Search Report:

D1: US 6286376 B1  
D2: DE 4005061 A1  
D3: FI 110033 B  
D4: US 5311290 A1  
D5: GB 2095827 A  
D6: FI 57662 B  
D7: EP 0604307 A1  
D8: WO 03046518 A1  
D9: US 4684251 A1  
D10: FI 110033 B

Document D1 and D2, cited as category X in the International Search Report have been reconsidered to define the general state of the art.

D1 describes a device for continuously operated dilution of a slurry sample. The slurry sample is diluted in a sample dilution unit (26) and thereafter fed into a continuously operated particle size analyser. The dilution unit comprises a chamber (56) in the shape of a funnel, elements for feeding the slurry sample (58), elements for feeding diluting liquid (62) and extracting elements (80) (figs. 1-2, column 6, lines 3-16, 48-63). The dilution chamber (56) is connected to the analyser (18). The two opposite walls of the chamber (56) are essentially parallel with respect to each other and with respect to the walls of the analyser (18) (Fig. 1). The sample dilution unit also comprises a second chamber (28) in the shape of a funnel (fig. 3). The sample to be diluted is fed into the chamber via a pipe (30) coming from the primary dilution chamber (56) and clean water via a pipe (50).

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: Box V

In order to advantageously agitate the liquid in the chamber (28) the pipes (30, 50) are arranged so as to achieve turbulent mixing of their liquids (column 7, lines 7-20).

D2 describes a device for continuously operated dilution of a slurry sample. The slurry is taken from a pipeline (7) and flushed into a downwardly narrowing chamber (31). Diluting liquid is added into the chamber (31) via a pipe (62). The chamber is connected to an optical analyser (5). The two opposite walls of the chamber (31) are essentially parallel to each other.

D3-D10 describe the prior art and are of no particular relevance for this written opinion.

The invention according to claim 1 differs from the device described in D1 and D2 in that the dilution is carried out in connection with the measurement cell of the analyzer so that the dilution liquid with the particles to be analyzed is conducted directly from the dilution into the measurement cell. The cited prior art does not give any indication that would lead a person skilled in the art to the claimed device for continuously operated dilution of a slurry sample. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-8 is novel and is considered to involve an inventive step. The invention is industrially applicable.